

Remarks

The present invention is directed to a hot-melt adhesive with improved hot-melt stability. Hot-melt adhesives by their very nature must be able to perform adequately at very high temperatures. As specifically set forth in the specification of the present invention, the present invention is an improvement over the prior art in that the adhesives of the present invention have a viscosity that varies only about 5% above or below its initial value over a period of 24 hours at 77°C. The present invention is also an improvement over the prior art because it has a hot-melt viscosity of ≥ 80 Pa.s at 177°C.

As the Examiner has pointed out on page 3 of the Non-Final Office Action, De Keyzer et al. do not disclose these specific, beneficial characteristics. The Examiner proceeds to state that since De Keyzer et al. and the present invention contain similar block copolymers, a tackifying resin, and a mineral oil these beneficial characteristics would implicitly be achieved. Non-Final Office Action p. 3. Applicant takes issue with the Examiner's position, because a number of compositions are on the market that contain a block copolymer, a tackifying resin, and a mineral oil but these compositions do not exhibit these beneficial characteristics of the present invention. Specifically, a block copolymer, tackifying resin, and mineral oil composition would not generally result in compositions that have a viscosity that varies only about 5% above or below its initial value over a period of 24 hours at 77°C and a hot-melt viscosity of ≥ 80 Pa.s at 177°C.

In the Office Action the examiner refers to Polymer E in De Keyzer et al., as it appears in Tables 1 and 2. Polymer E is not a polymer of the present invention. Polymer E has a coupling efficiency that is too high. Independent claims 11, 16, 21, and 26 claim a coupling efficiency in a range from 63% to 80% maximum. Composition E has a coupling efficiency of 87% meaning that it couples much more than the present invention and this likewise has an effect on viscosity among other properties. The Examiner on page 6 of the Non-Final Office Action agrees that De Keyzer et al. teach a coupling efficiency of 81% to 87%, which is outside the range of the present invention.

The Examiner has stated that the “crux of the rejection of record” is that applicants have not provided a good side by side comparison of the coupling efficiencies of De Keyzer et al. and the present invention. Non-Final Office Action p. 6. It should be noted that it is not the applicant’s responsibility to present such data. To make a proper rejection, it is the responsibility of the Examiner to locate prior art that suggests or teaches each element of the claims. To render claims unpatentable, the Examiner must do more than merely “consider” each and every feature for this claim. Instead, the asserted combination must also teach or suggest each and every claim feature. *In re Wada and Murphy*, Appeal 2007-3733. Indeed, as the Board of Patent Appeal and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make “a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” See *In re Wada and Murphy*, Appeal 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original).

The Examiner has not located a relevant piece of prior art that discloses a coupling efficiency in the range of from 63% to 80% that is required by all independent claims 11, 16, 21, and 26. As such, De Keyzer et al. fail to cite or disclose each and every element of independent claims 11, 16, 21, and 26.


As the Examiner is aware, coupling efficiency is of critical importance in the synthesis of block copolymers, which copolymers are prepared by a linking technology. In a typical anionic polymer synthesis, prior to the coupling reaction, the unlinked arm has only one hard segment (typically polystyrene). Two hard segments are required in the block copolymer if it is to contribute to the strength mechanism of the material. Uncoupled arms dilute the strength forming network of a block copolymer that weakens the material. The very high coupling efficiency realized would result in a high strength, coupled, block copolymer. As such, Composition E has a coupling efficiency of 87% meaning that it couples much more than the present invention, resulting in a higher strength block copolymer that is less viscous than a composition with a lower coupling efficiency. The present invention claims a coupling efficiency between 63% and 80%, resulting in a more viscous composition than a composition with a higher coupling efficiency. As such, a composition with a higher coupling efficiency, such as De Keyzer et al., would not exhibit the hot-melt viscosity of the present invention.

It is again submitted that the small differences set forth in the present invention and Polymer E of De Keyzer et al. easily accounts for the significantly improved composition of the present invention which is a very narrow range in all respects for each component of the present invention and has the desired effect. Essentially, the present invention is an unrecognized narrower range invention within De Keyzer et al. that is now being recognized and claimed in the present invention to De Keyzer et al. De Keyzer et al. did not recognize the narrower invention of the present application.

These rejections are respectfully traversed, and reconsideration and withdrawal of the rejection is respectfully requested.

Respectfully submitted,

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